

REMARKS

Applicants acknowledge the allowance of Claims 14 and 16, as set forth in item 8 on page 4 of the Office Action. For the reasons set forth hereinafter, Applicants respectfully submit that all claims of record in this application are now allowable.

In response to the rejection of Claim 11 under 35 U.S.C. §112, second paragraph for failing to particularly point out and distinctly claim the invention, Applicants have amended Claim 11 so that it now depends on Claim 16, and have also changed the phrase “the end faces” to “end faces”. An antecedent for the locking blocks is to be found in Claim 16. Accordingly, reconsideration and withdrawal of this ground of rejection are respectfully requested.

Claims 1 and 2 have been rejected under 35 U.S.C. §102(b) as anticipated by Hiramatsu (U.S. Patent No. 5,374,110), while Claims 6-9, 11 and 15 have been rejected as anticipated by Nishide (U.S. Patent No. 5,794,978). However, as discussed in greater detail hereinbelow, Applicants respectfully submit that all of the latter claims distinguish over the cited references, whether considered separately or in combination.

The present invention is directed to a seatbelt lock having a preventive tensioning device of the type which temporarily tightens the seatbelt, from a

normal "operating" position into a lowered "safety position", in the presence of circumstances which indicate that a crash may be imminent. In particular, as defined in Claim 1, the seatbelt lock according to the invention includes both an energy accumulator and a drive unit. The energy accumulator is maintained preloaded when the seatbelt lock is in the operating position, while the drive unit is operable to transfer the seatbelt lock from the safety position back into the operating position. Finally, as further defined in Claim 1, the drive unit is also operable to move the seatbelt lock from its operating position into a "comfort position" that is raised relative to the operating position. As noted at page 2, lines 17-22, the advantage of the latter arrangement is that, in spite of the sunken positioning of the seatbelt lock, particularly in rear vehicle seats, the seatbelt lock can be reached more easily, for example for the purpose of buckling.

The Hiramatsu patent, which is cited in the Office Action in respect of Claims 1 and 2, discloses a pretensioner for vehicle seatbelts which includes a "drive device" 3. The latter includes a main spring 31, which is housed in a spring guide tube 32, as noted at Column 3, lines 17-19. The spring guide tube can slide through guides 11 and 12, being supported by four roller balls 12. (See Column 3, lines 7-11.) A large deceleration of the vehicle as it is traveling toward the left in Figure 1 causes the spring guide tube to move slightly to the left, which in turn causes the end of the lever 42 to withdraw from its groove 44a. This releases the trigger mechanism and allows the main spring 31 to expand to

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the left, pulling the traction member (cable) 2 to draw the seat buckle stalk downward and to the rear. (See, for example, the discussion at Column 4, line 54 – Column 5, line 5.)

As can be seen from the foregoing brief description, the Hiramatsu reference differs from the seatbelt lock defined by Claim 1 in at least two important respects. First, it is capable only of moving the seatbelt buckle between two positions. The first, “uppermost”, position keeps the belt loosely tightened around the body of the occupant, as in normal circumstances. (See Column 4, lines 21-29, and especially lines 26-29.) In the second, “lowermost”, position, which is activated when an excessive deceleration is encountered, the Hiramatsu apparatus pretensions the seatbelt by lowering it to the position shown in Figure 3.

Accordingly, the Hiramatsu patent does not teach or suggest a seatbelt lock such as defined in Claim 1, which is capable of moving the seatbelt lock from the normal “operating position”, either by lowering it into a “safety position”, or by raising it into a “comfort position”, in which the buckle itself becomes more accessible to a vehicle occupant. As noted previously, and as discussed in the specification at page 2, the advantage of this arrangement is to improve the accessibility of the seatbelt lock by raising it from its sunken position into an elevated position.

Second, the Hiramatsu patent does not include both an energy accumulator and a drive unit which is operable to move the seatbelt lock from the safety position back into the operating position (and from the operating position into the comfort position). In this regard, the Office Action refers to the spring guide tube 32 (which contains the main spring 31) as an energy accumulator. However, Applicants respectfully submit that while Hiramatsu appears to include an energy accumulator, it does not include a drive unit such as defined in Claim 1. In particular, the drive device 3 (using the terminology of the Hiramatsu patent) referred to in the Office Action does not constitute a separate component from the energy accumulator, as is apparent from the discussion at Column 3, lines 17-20. That is, the element that is referred to in Hiramatsu as a “drive device 3 comprises the main spring 31 (FIG. 1), which is a compression coil spring, a spring guide tube 32 for receiving and guiding it, a spring stopper 33 and a spring guide 34”. Accordingly, it is apparent that the energy accumulator referred to in the Office Action is in fact a part of the drive unit, the function of which is to move the buckle stalk 8 downward and rearward, as can be seen by comparing Figures 1 and 3. It does not correspond structurally or functionally to the “drive unit” of Claim 1, in that it is not “operable to transfer the seatbelt lock from the safety position back into the operating position”, and is also not operable “to move the seatbelt lock from its operating position into a comfort position that is raised relative to the operating position”.

Accordingly, Applicants respectfully submit that Claims 1 and 2 distinguish over Hiramatsu.

Claims 6 and 15, on the other hand, define a deflection unit for a seatbelt lock. In Claim 6, for example, the deflection unit includes a shaft which has a cam track that engages with and activates a catch. In addition, a ratchet gear which is carried on the shaft, and has a grooved track that is also engaged with the catch. Finally, as noted in Claim 6, the ratchet gear is rotatably mounted on the shaft such that it is rotatable between two operating positions relative to the shaft itself. Claim 16 is similarly limited.

The Nishide reference, on the hand, discloses a seatbelt retractor system which includes apparatus for preventing the payout of the retracted seatbelt when a vehicle suddenly decelerates. As can be seen in Figure 1, the Nishide system includes a gas cylinder 46 and a gas generator 39. A rapid deceleration of the vehicle causes the gas generator 39 to detonate, driving the piston 47 to the left (Figure 1), which rotates the pulley 44 clockwise, pulling the seatbelt buckle 54 downward and rearward. (See Column 6, lines 13-30.) As shown in Figures 4a-e, a pawl 27 and ratchet 10 permit the clockwise rotation of the pulley 44 (Column 6, lines 33-47), and thus retraction of the belt buckle. Thereafter, as shown, for example, in Figure 2, the ratchet and pawl prevent counterclockwise rotation of the pulley 44 so that the belt is held tight. (See Figure 2; Column 6,

lines 47-48; and Column 6, lines 52-62. See also Figures 4a-4e, which illustrate the sequence of events as the ratchet 10 attempts to move in the counterclockwise direction, bringing the teeth of the pawl into engagement with the teeth of the ratchet.

Applicants respectfully submit, however, that Nishide does not disclose a device that includes a shaft that has both a cam track thereon, and carries a ratchet gear which is rotatably mounted thereon, and is rotatable relative to the shaft, between two operating positions. Moreover, it also does not include a catch which is engaged with and activated by the cam track, and is also engaged with the ratchet gear, as further recited in both Claims 6 and 15. (The latter features of the invention are discussed in the specification at page 3, lines 21-30 and page 10, line 8 through page 13, line 6.) Accordingly, Applicants respectfully submit that Claims 6 and 15 as amended distinguish over the cited Nishide patent.

Finally, new Claim 17, which depends from Claim 1, provides that in the operating position, the energy accumulator is releasable to move the seatbelt lock from the operating position to the safety position, and that operation of the drive unit to transfer the seatbelt lock from the safety position back into the operating position also restores the energy accumulator to a preloaded state. The latter features of the invention are also not found in either of the cited

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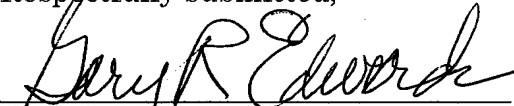
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references. Accordingly, Claim 17 distinguishes over those references for this additional reason as well.

In light of the foregoing remarks, this application should be in consideration for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this response or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 095309.56365US).

Respectfully submitted,



Gary R. Edwards
Registration No. 31,824

CROWELL & MORING, LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
GRE:kms
7171565_1